

ET Summit 2021

Presented by





Food Production Investment Program Overview

Emerging Technologies Summit

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Program Background

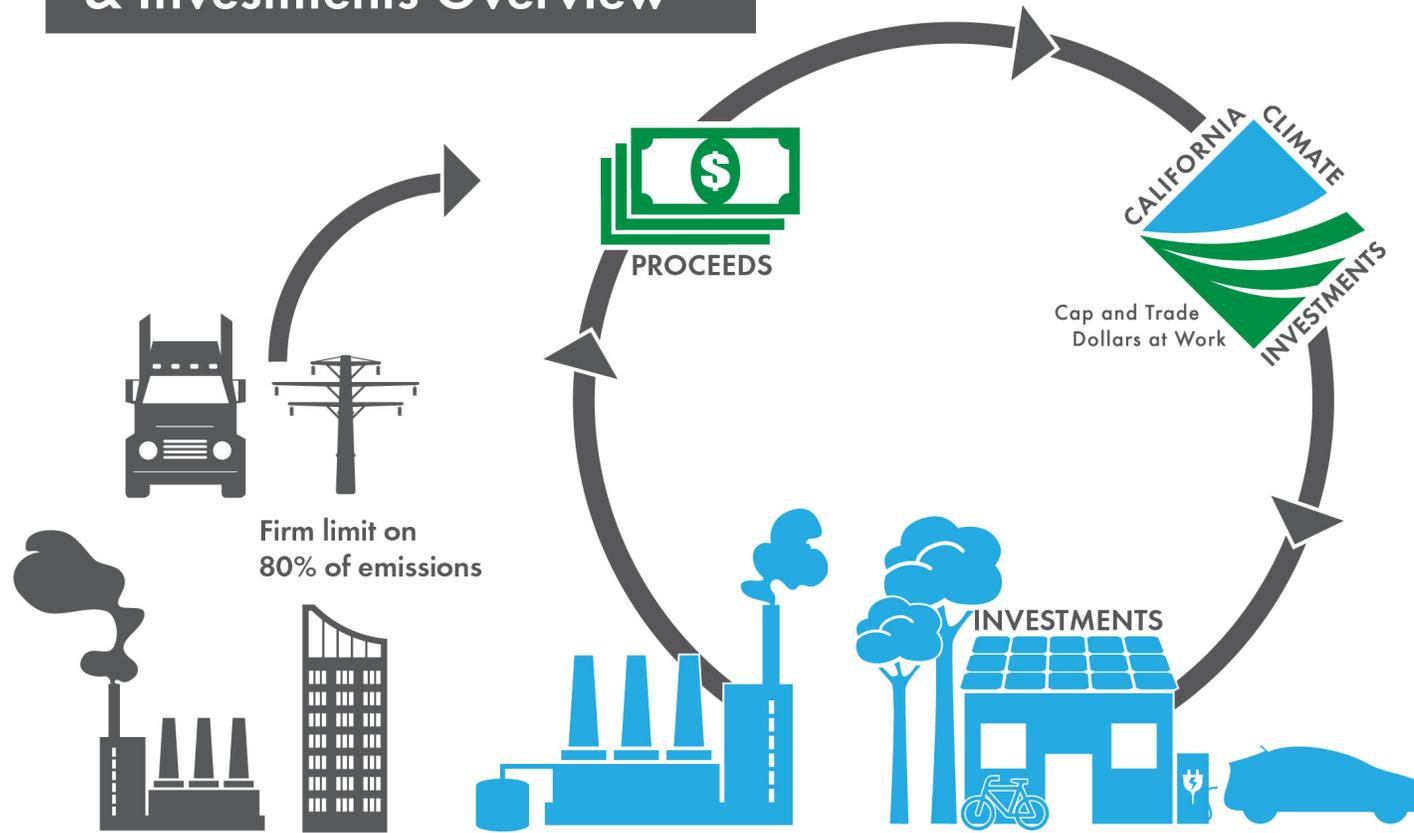
- The Food Production Investment Program (FPIP) funds drop-in and emerging energy technologies at food production facilities with the goal of reducing greenhouse gas emissions.
- FPIP is part of California Climate Investments, a statewide initiative that puts billions of Cap-and-Trade dollars to work reducing greenhouse gas emissions, strengthening the economy, and improving public health and the environment — particularly in disadvantaged communities.





California Climate Investments

California's Carbon Pricing & Investments Overview



Source: California Air Resources Board, 2021



Key Program Innovations

- Large grants focus on capital-intensive investment (e.g., equipment)
- Applications due between late fall and early spring to accommodate food processing seasonal schedules
- Two tier system for near term GHG reduction and next generation technologies



Examples of Eligible Technologies

Tier I

- Compressors
- Machine drive upgrades
- Mechanical dewatering
- Motors and variable frequency drives
- Refrigeration system optimization
- Low global warming potential refrigerants
- Drying equipment
- Process equipment insulation
- Boilers, economizers
- Steam traps, condensate return, heat recovery
- Evaporators
- Internal metering and software
- Waste heat to power
- Industrial cooking equipment

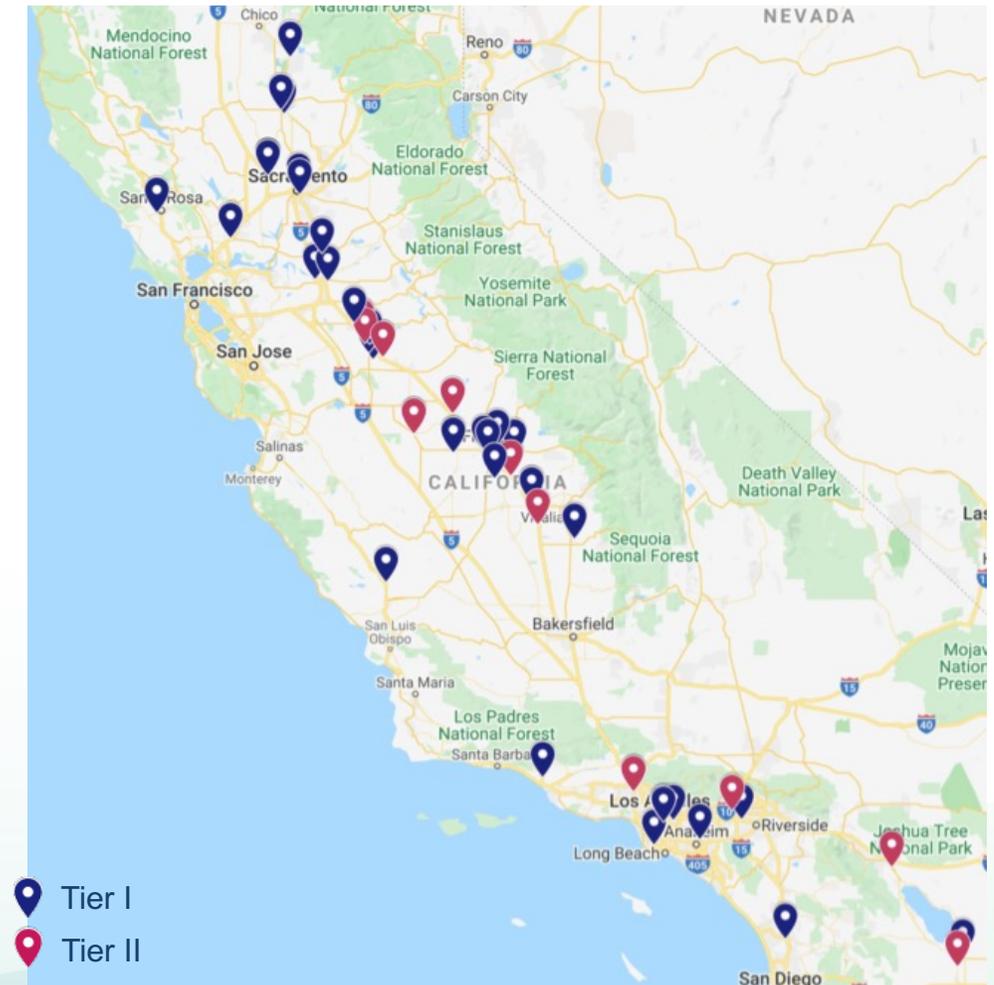
Tier II

- Solar thermal
- Bioenergy, including biogas production
- Microgrids
- Electrification of fossil fueled equipment



Project Locations to Date

- 85% of projects benefit disadvantaged and/or low-income communities
- 47 unique project sites
 - 10 Northern California
 - 22 Central Valley
 - 15 Southern California





Who Has Received Funding?

ANIMAL FEED
& ETHANOL



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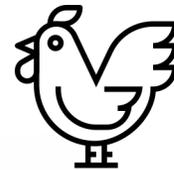
11

PREPARED FOOD
PRODUCERS

BEVERAGE,
BREWERIES &
WINERIES



7



9

MEAT &
RENDERING

DAIRY
PROCESSING



6



10

FRUITS,
VEGETABLES &
NUTS



Program Benefits

159,000 MT CO₂E*

PROJECTED ANNUAL EMISSIONS REDUCTION

\$113M

AWARDED

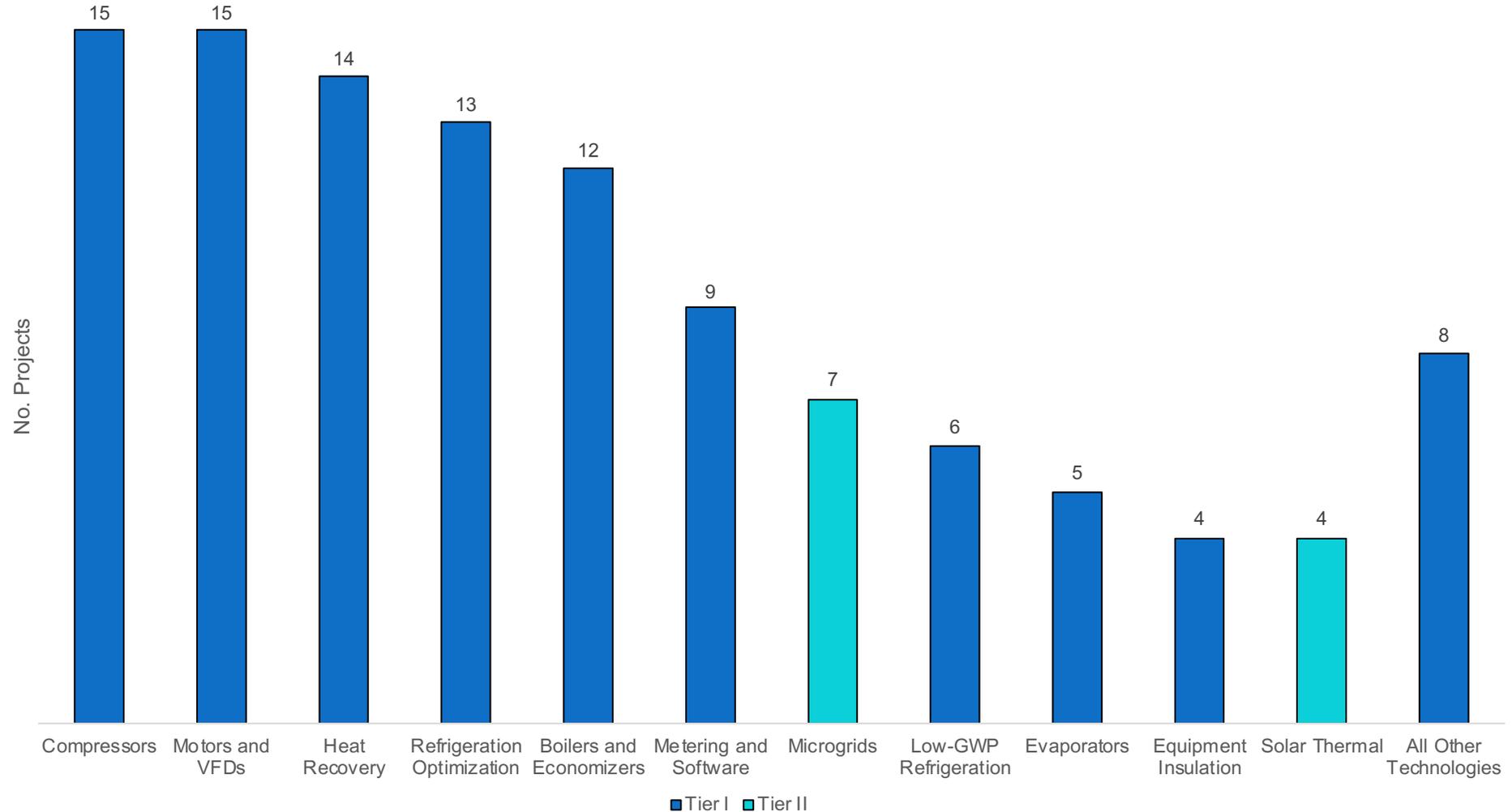
50 PROJECTS

39 TIER I & 11 TIER II

*Preliminary staff estimate – actual results will be quantified during project measurement & verification



Notable Project Types

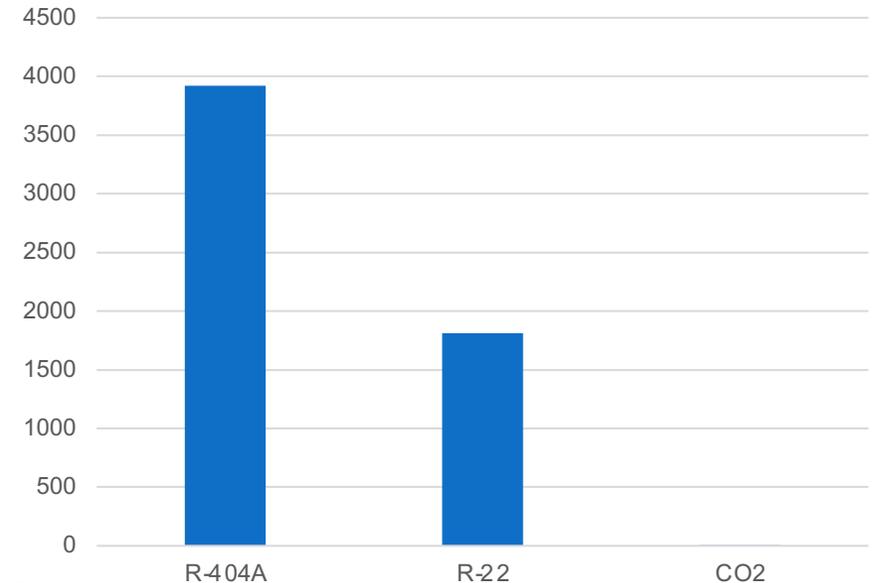




Amy's Kitchen

- Project Title: Amy's Kitchen Santa Rosa - CO2 Refrigerant Conversion w/Heat Recovery
- Amount: \$4,410,728 (\$2,375,007 Match)
- Facility Type: Frozen Food
- Location: Santa Rosa, CA
- Facility Info:
 - 100,000 SF facility that produces over 15 million pounds of ready-made meals annually
 - Multiple large refrigerated spaces make up about 25% of facility
- Project Description:
 - Replace 23 rooftop condensing units using R-404A and 1 spiral freezer using R-22 with 5 transcritical CO2 compressors.
 - Production of R-22 is banned nationally in 2020 and refrigerant systems with GWP>750 are banned in California starting in 2022.

GWP of Refrigerants



1 lb of R-404A or R-22 has several thousand times the climate impact of CO2 over a 20-year window



Anheuser-Busch

- Project Title: Anheuser-Busch Solar Microgrid Project
- Amount: \$5,771,259 (\$1,018,457 Match)
- Facility Type: Brewery
- Location: Van Nuys, CA
- Facility Info:
 - Fifth largest brewery in the U.S., supports west coast, southwest, and pacific export markets
 - Brews over 77 different brands and produces over 300 unique packages
- Project Description:
 - Install a microgrid, consisting of large roof-mount solar array and a lithium-ion battery storage.
 - Design features: 1.8 MW maximum power rating and provides up to 2.3 hours of islanded operation and 4 MWh of battery storage.



Anheuser-Busch Van Nuys Brewery



Saputo Cheese USA

- Project Title: Concentrated Solar Thermal for Sustainable Cheese Production in California
- Amount: \$5,456,184 (\$962,856 Match)
- Facility Type: Dairy Processing
- Location: Tulare, CA
- Facility Info:
 - Second largest cheese producer in California.
 - Converts milk into cheese using steam from the central plant.
- Project Description:
 - Install an industrial-scale concentrated solar power (CSP) system (Hylux by to offset a portion of the central boilers heating requirement.
 - Hylux was developed through PIER Electric, EPIC, and DOE grants.
 - Hylux uses inexpensive materials (e.g., plastic, flat collector mirrors) to drive down solar thermal costs.

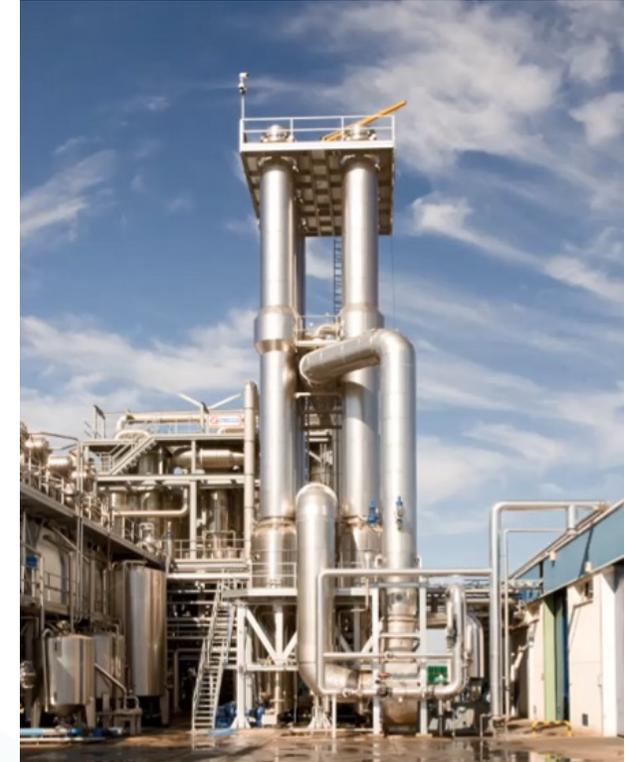


Hylux demo unit in Brawley, CA



Pacific Coast Producers

- Project Title: Pacific Coast Producers MVR Evaporation Upgrade
- Amount: \$2,806,326 (\$1,511,099 Match)
- Facility Type: Tomato Processing
- Location: Woodland, CA
- Facility Info:
 - Largest tomato processing facility in Northern California.
 - Processes tomatoes into diced tomatoes, tomato paste, and other tomato products.
- Project Description:
 - Install-very high efficiency, multi-stage mechanical vapor recompression (MVR) pre-evaporator system.
 - Estimated savings: 1.3 million therms/year



High Efficiency Pre-Evaporator System



Resources

- Information on the Food Production Investment Program
[Food Production Investment Program | California Energy Commission](#)
- Contact for more information
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Thank You!